



## Weekly Precious Metals News Articles: September 2, 2022

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### **Below is a cross section of relevant news article to the world of Precious & Critical Metals:**

This aggregation of current relevant article is assembled each week to follow precious & critical metals markets, supply & demand shifts, investment, mining, recycle and industrial applications.

**Printable PDF version with more embedded graphics is attached.** Enjoy-

### **Gold**

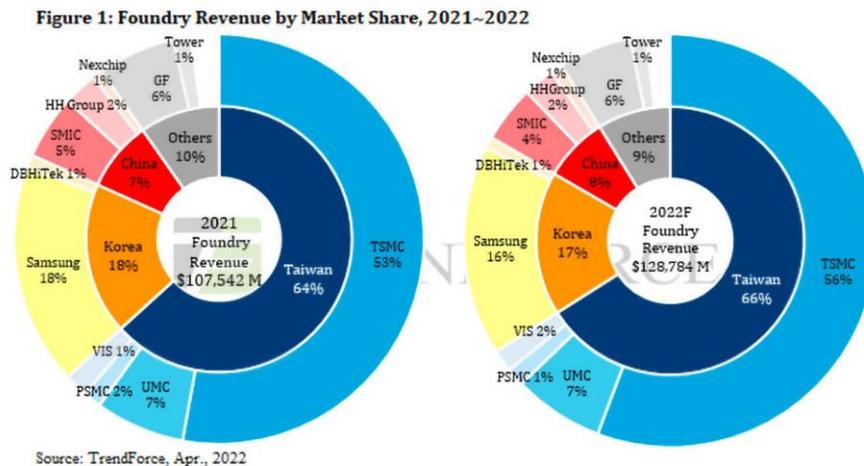
- [Gold bounces after hitting 6-week low](#)
  - Gold for December delivery rose +\$13.50, or 0.8%, to \$1,722 .80/oz
  - December silver climbed 21.9 cents, or 1.2%, to \$17.885 an ounce after ending Thursday at the lowest since June 2020. For the week, prices were down around 4.7%.
  - Platinum futures for October delivery advanced \$6.70, or 0.8%, to \$812.20 per ounce, while December palladium gained \$29.70, of 1.5%, to \$2,026 per ounce.
- [Gold gains on dollar retreat after U.S. jobs data](#)
  - Gold bounced +1% on Friday as the dollar retreated after U.S. jobs data was mostly in line with expectations, but were still bound for a third consecutive weekly fall pressured by an elevated interest rate environment.
- [The Outlook for Gold and Silver Amidst Rising Inflation](#)
  - Q&A with Bart Melek, Global Head of Commodity Markets Strategy, TD Securities

### **Semiconductor Related Articles (impacting Precious Metals electronics):**

- [Sputtering Targets Driven by Robust Semiconductor Demand](#)
  - TECHCET announced that the Semiconductor Sputtering Target market is expected to reach US\$1.33 billion in 2022, up 7% from US\$1.24 billion in 2021. Target suppliers are planning for 2023 deliveries to remain on track to meet high forecasted customer demand. TECHCET also forecasts a slight decline -1.1% YoY for 2023, due to inventory corrections.
  - ~1.5-2k Gold targets/year, but most of the Semi PVD Target demand is composed mostly of Ti, W, Ta, Cu targets.
- [U.S. Semiconductor Renaissance: All the Upcoming Fabs](#)
  - Everything we know about the 11 new chip manufacturing facilities in America.

New Semiconductor Fabrication Facilities in the U.S.									
Data by companies, compiled by Tom's Hardware									
	Fab Name	Target Node(s)	Initial Capacity	Built-Out Capacity	Number of Phases/Fabs	Investments	Completion	Location	Status
GlobalFoundries	Fab 8	14LP/14HP/12LP/12LP+/NVM/RFSOI/SiPho	47,500 WSPM	60,000 WSPM	Fab 8 upgrade	\$1 billion	2022 ~ 2023	Malta, New York	?
	New Fab	?	?	?	?	?	?	Malta, New York	Optioned
Intel	Fab 52	Intel 20A	?	?	1	\$20 billion	2024	Chandler, Arizona	Confirmed
	Fab 62		?	?	1			Chandler, Arizona	Confirmed
	?	EMIB, Foveros	?	?	?	\$3.5 billion	2023 (?)	Rio Rancho, New Mexico	Confirmed
	?	Intel 20A/18A	?	?	1	over \$20 billion	2025	Columbus, Ohio	Confirmed
	?		?	?	1			Columbus, Ohio	Confirmed
Samsung Foundry	?	EUV-enabled	?	?	?	\$17 billion	H2 2024	Taylor, Texas	Confirmed
Samsung Foundry	?	0.55 High-NA EUV-enabled (?)	?	?	11	\$192 billion	2034 - 2042	Austin/Taylor, Texas	Optioned
TSMC	Fab 21	NS/NSP/N4/N4P/N4X	20,000 WSPM	?	6 phases	\$12 billion initially	Early 2024	Phoenix, Arizona	Confirmed
Texas Instruments	Sfab	?	?	?	4 phases	\$30 billion	2025 and onwards	Sherman, Texas	Confirmed

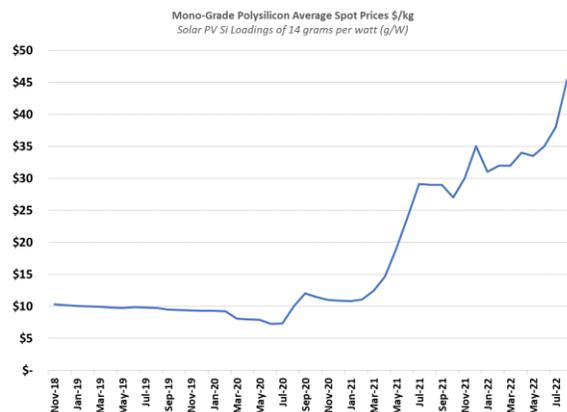
- [TSMC touts its 2nm process as best technology in world](#)
  - TSMC CEO confirmed that mass production using the firm's 2nm process would start in 2025. Rivals Intel and Samsung are also planning to roll out 2nm process between 2024 and 2025.
  - TSMC's 2nm process will use the sophisticated Gate-All-Around (GAA) structure.
  - The 3nm process uses the FinFET technology, a 3D transistor structure that allows a chip to run faster using the same amount of power or to run at the same speed on reduced power.
- [There is TSMC and there's everybody else, can Samsung or Intel catch up?](#)
  - The leading edge of semiconductor manufacturing



## Silver

- [Silver Institute Newsletter – Aug 2022](#)
  - Silver's Use in Photography Continues; The Passing of Bradford Cooke, Silver Institute President; A New Way to Coat Body Implants with Silver; Silver Helps Test for COVID-19; Silver Helps Pomegranates Grow Stronger and Strawberries Last Longer; New Technology to Recycle Silver from Solar Cells Shows Promise
- [First Solar Plans to Produce Solar Panels in the US](#)
  - The Inflation Reduction Act includes more than \$60 billion in clean-energy tax credits. First Solar is well positioned to cash in because it doesn't rely on China.
  - *Matt: First Solar produced CdTe (Cadmium Telluride) variety Solar PV. This thin film technology is about 5% of the Solar PV market share today, while First Solar projects CdTe market share will grow.*
  - *Matt: The bad news is Cd and Se Selenium used in the film structure are both carcinogens, and therefore force the need for incineration and recycle. These CdTe type of Solar PV panels should not go direct to landfill. They need to be safely incinerated.*

- *Matt: The good news is that First Solar is one of the biggest CdTe Solar PV panel recyclers, recovering even the Silicon Si in addition to the Silver Ag. They have always tried to scale their recycle capacity to meet the EOL needs of their product in the field.*
- [\(UK's\) Solar panel sales boom as energy bills soar](#)
  - Just over 3,000 solar installations are being carried out every week, according to trade association Solar Energy UK, up from 1,000 a week in July 2020.
  - One provider said this month it had seen enquiries about solar panels rise tenfold.
- [Guide to the London Silver Fix](#)
  - The Silver Fix is used by precious metal producers, consumers, and traders for reference in executing contracts and transactions. Silver fix pricing is set once a day at noon London time. The London Fix is set in U.S. dollars/toz in a series of auction rounds lasting 30 seconds.
  - After each auction round, the system analyzes whether there is a difference between buying and selling. When the difference is within the threshold then the auction stops and the silver price is set. The London Bullion Market Association (LBMA) sets the final silver price in U.S. dollars, British pounds, and Euros.
- [The world's largest solar park will produce 5 GW energy by 2030](#)
  - The world's largest solar park, located in Seih Al Dahal, Dubai, was designed to reduce carbon dioxide emissions by over 6.5 million tons each year by 2030. The solar park uses a range of photovoltaic and concentrated solar power technologies.
- [Polysilicon prices spike on factory shutdowns](#)
  - Average polysilicon prices hit \$45.47/kg this week. The nation's Ministry of Industry and Information Technology, the State Administration for Market Regulation, and the National Energy Administration have also asked regional authorities to take action to deal with the price increase.



## **Precious Metals Mining:**

- [Does ESG contain the seeds of its own destruction?](#)
  - But here's the rub: a perception has emerged that this same ESG agenda is hampering the mining sector's ability to get critical minerals projects off the ground.
  - "ESG is driving an increasing demand at the same time as it is constraining supply. That's exactly what's happening," Rohitesh Dhawan, CEO of the London-based International Council on Mining and Metals (ICMM), said in an interview.
- ['Real likelihood' Gold Fields shareholders will approve Yamana takeover, says Griffith](#)
  - Gold Fields CEO, Chris Griffith told analysts at the firm's interim results presentation there was "a real likelihood" shareholders would approve the firm's all-share bid for Yamana Gold.
  - "I think the market is beginning to understand the deal. The spread has come down so we are seeing shareholders coming back," he said.
- [Climate risk and decarbonization: What every mining CEO needs to know](#)
  - Despite changing climate conditions, options exist to improve the resiliency of mining assets to certain physical effects. We evaluated the impact of water stress and flooding in detail and suggest how operators might mitigate these risks.
- [Implats to smoke out Northam's intentions for RBPlat after saying it would close bid in weeks](#)

- Implats CEO Nico Muller said the company would close its takeover bid for Royal Bafokeng Platinum (RBPlat) at the month-end – a development that is likely to smoke out Northam Platinum’s ambitions with respect to RBPlat.
- [Northam warns of disruption as counts cost of runaway inflation, community unrest](#)
  - Paul Dunne, CEO of Northam partly attributed the below par operational performance to “regional community unrest in the eastern limb of the Bushveld Complex” that resulted in lost production shifts at Booysendal. Northam also ran into lower grades at Booysendal’s North mine which led to declines in concentrator feed grades.
  - Speaking at the firm’s presentation today, Dunne said there were about 140 separate incidents of disruption at the firm’s facilities during the 12 months. These include the hijack of an Eskom sub-station cutting power supply for four days.

## **E-Waste & Precious Metals Recycle Related:**

- [Bill to expand California e-scrap program passes](#)
  - Battery-embedded products are on track to be included in California’s Electronic Waste Recycling Act after a bill passed the Senate and Assembly. If Gov. Gavin Newsom signs SB 1215 into law, consumers will be required to pay an e-waste recycling fee upon the purchase of certain new or refurbished products starting Jan. 1, 2026. The fee amount is to be set by the Department of Resources Recycling and Recovery (CalRecycle) by Oct. 1, 2025.
- [Researchers test low-energy gold \(e-waste\) recovery method](#)
  - A cutting-edge method of recovering gold from solutions works without energy inputs, lab testing found. The process works by putting graphene into a solution containing traces of gold. Within a few minutes, the gold is attracted to the graphene sheets, with no other chemicals or energy input. The graphene is then burned off to recover the gold.
- [Recovery of rare earth elements from spent NiMH batteries using subcritical water extraction with citric acid](#)
  - Highlights: Effective leaching of REEs, Ni and Co from spent NiMH using SWE.
  - Citric acid performed well due to enough acidity and complex formation.
  - Nearly 90% of REEs were leached out in SWE using 2.0 N citric acid, 150 °C, 5 min.
  - Nearly 99% REEs recovered at [H3PO4]: [REEs] of 10:1, pH 2.0, and 65 °C.
- [Catalytic converter etching kits on the way to decrease theft, DMV says](#)
  - In an effort to make it harder to steal catalytic converters, Schroeder showed off etching kits, which are now available in New York. The etching starts with a black “stencil” that is put on the converter, followed by a liquid, which burns a serial number into the converter once the car is running. Then, just like a house with security protection, a sticker is placed in the window to ward off potential thieves.
  - “It’s traceable now because of the etching kit, because of the VIN number, and because of communicating with law enforcement. There is really no way or where to go, you are going to get caught,” said Schroeder.

## **Platinum**

- [Platinum Group Metals Center Launched In China](#)
  - Shanghai’s Lin-Gang Special Area is the location for a new trade and technology centre dedicated to the growth of the PGMs market
- [Remote sensing of heavy-duty vehicle emissions in Europe](#)
  - During remote sensing, a snapshot of a vehicle’s emissions is recorded along with the vehicle’s license plate number, from which the manufacturer and year of registration can be derived. Based on the year of

registration, it's possible to infer the vehicle emission standards under which the vehicle was subject to, allowing for a comparison between the mandated regulatory emissions std. and the real-world emissions.

## **Fuel Cells/Hydrogen Economy Related Articles:**

- **[U.S. Catalytic Converter Theft Total Projected Repair Cost for the Public will Exceed \\$1.5 Billion Dollars \(LinkedIn\)](#)**
  - The latest Insurance Catalytic Converter Claims Data Now Projects 295k Property/Casualty Catalytic Converter Claims Loss Rate for 2022, with an Average Repair Cost (including deductible out-of-pocket paid by insured owner) of \$2,621 per claim. Overall Estimated Catalytic Converter Theft Rate for Insured and Uninsured Thefts Likely to Exceed 600k Total Stolen Units. The Total Projected Repair Cost for the Public will Exceed \$1.5 Billion Dollars.
- **[Bosch to invest \\$200 mln to make fuel cell stacks in South Carolina](#)**
  - The fuel cell stacks produced in the facility will drive hydrogen-powered trucks coming to U.S. roads in the next few years, the company said.
  - Last year, Bosch signed with EV truck maker Nikola Corp to build Bosch fuel-cell power modules.
- **[A simple way to significantly increase lifetimes of \(SOFC\) fuel cells and other devices](#)**
  - MIT researchers find that changing the pH of a system solves a decades-old problem.
  - The team coated the fuel/electrolysis cell cathode with lithium oxide, a compound that changes the relative acidity of the surface from being acidic to being more basic. "After adding a small amount of lithium, we were able to recover the initial performance of a poisoned (SOFC) cell," Tuller says. When the engineers added even more lithium, the performance improved far beyond the initial value. "We saw improvements of three to four orders of magnitude in the key ORR rate and attribute the change to populating the surface of the electrode with electrons needed to drive the oxygen incorporation reaction."
- **[Delta Air Lines signs offtake agreement for 385 million gallons of hydrogen-derived aviation fuel](#)**
  - Delta Air Lines is set to use sustainable aviation fuel derived from hydrogen as part of a newly signed offtake agreement which will see an 839MW electrolyser installation in the US.
- **[Andrex maker to power toilet paper factory with hydrogen as gas prices soar](#)**
  - Kimberly-Clark will buy green H<sub>2</sub> made from wind and solar power as part of a deal with renewables company Carlton Power for its factory in Barrow-in-Furness in Cumbria, which it claims will reduce its reliance on natural gas by 30%.
- **[DeNora focuses its attention on High-Temperature PEM fuel cell, Phosphoric Acid fuel cell, Direct Methanol fuel cell, and Alkaline fuel cell](#)**
  - For each of these technologies, De Nora could provide anode and cathode catalysts, gas diffusion electrodes (GDE), Gas Diffusion Layers (GDL), Membrane Electrodes Assembly (MEA), various types of flow fields, and other cell components.
- **[Shanghai goes all-in on hydrogen, with plans for H<sub>2</sub> port, pipelines, trading platform and more](#)**
  - The city of Shanghai has announced major plans to become China's de facto centre for clean hydrogen, unveiling a slew of wide-ranging policies that include the creation of a national hydrogen trading platform, and the construction of a "leading hydrogen energy port", a regional H<sub>2</sub> pipeline network, and a physical hydrogen trading hub.
  - The plans also include fiscal support for hydrogen-focused businesses, support for fuel-cell buses, trucks and refuelling stations, demonstrations of offshore wind- and solar-powered hydrogen production, the use of H<sub>2</sub> for power grid peak regulation and as back-up power for data centres.
- **[Blue World Technologies ready to scale up methanol fuel cell tech for maritime sector](#)**

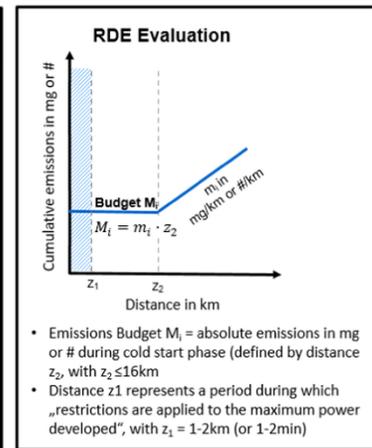
- In late 2021, the company insourced all the production of the core fuel cell components and is currently in pre-series production. Later this year, Blue World Technologies will launch series production and with further scaling, the company expects to reach a production capacity of 500 MW within a couple of years.
- The (DMFC – Direct Methanol) fuel Cells act as an alternative to fossil-based combustion engines, and with high energy conversion, the methanol fuel cells enable a cost-efficient utilisation of renewable e-fuels such as methanol.

## Palladium

### • [Developments for future EU7 regulations and the path to zero impact emissions – A catalyst substrate and filter supplier's perspective](#)

- New EU7 emission standards are currently under development. While the timing and exact level of stringency of these standards is not available, both OEMs and suppliers are preparing to meet significantly reduced tailpipe NOx and particle number standards for both light- and heavy-duty vehicles. We present here some of the emission control systems that are likely to be implemented and details on the advanced component technologies.

Passenger Vehicles	EU6d (PI/CI)	EU7 Scenario 1	EU7 Scenario 2
CO / mg/km	1000 / 500		400
NMOG / mg/km	68 / HC+NOx	45	25
NOx / mg/km	60 / 80	30	20
PM / mg/km	4.5		2
PN <sub>23nm</sub> / #/km	6e11		–
PN <sub>10nm</sub> / #/km	–		1e11
NH <sub>3</sub> / mg/km	–		10
CH <sub>4</sub> / mg/km	–	20	10
N <sub>2</sub> O / mg/km	–	20	10
HCHO / mg/km	–		5



- *Matt: Will NoX reductions by 50+% will drive incremental Rhodium demand? Likely. Overall, this is good for the AutoCat PGMs.*

## PGM Minor Metals (Rhodium, Iridium, Ruthenium, Osmium)

### • [Water electrolysis: from textbook knowledge to the latest scientific strategies and industrial developments](#)

- *Matt: Extremely long 180-page technical deep dive. For those in R&D roles.*
- *Iridium and Platinum electrolyzer projected loadings roadmap:*

#### PEM Water Electrolyzer Design Thrifing Trajectory

Parameter	2020 status	2020 target	2035 target	Future
Ir ( $\text{mg cm}^{-2}$ )	2–5	1	0.2–0.40	0.05–0.2
Ir ( $\text{g kW}^{-1}$ )	<2.5	0.40	0.05–0.4	0.01–0.4
Pt ( $\text{mg cm}^{-2}$ )	1–2	1	0.5	0.05
Pt ( $\text{g kW}^{-1}$ )	0.5–1	0.5	0.25	0.1
Current density ( $\text{A cm}^{-2}$ )	2	2	3	5
Power density ( $\text{W cm}^{-2}$ )	3	3	8	10
Electrode area ( $\text{m}^2$ )	0.12	—	—	0.50

Source: Chemical Society Reviews

### • [Large-Scale Green Hydrogen for the UK: Air Products and Associated British Ports partner on Renewable Hydrogen Production](#)

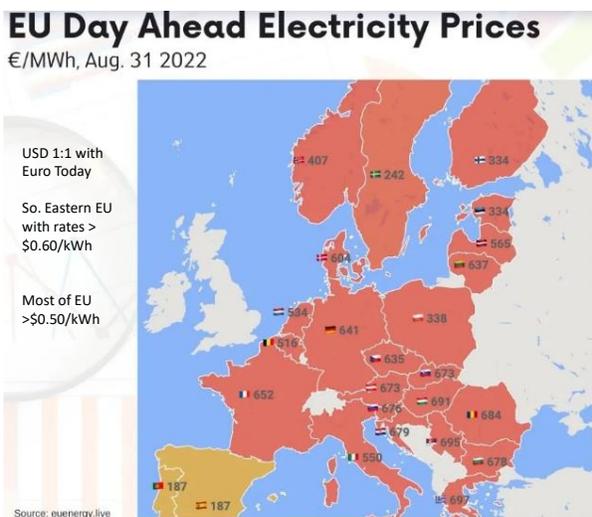
- The UK Government has plans for 10GW of low-carbon hydrogen to be in production or construction by 2030. Currently there is no significant domestic production of such hydrogen in the UK. Air

Products, as a first mover, aims to help drive progress towards the Government's targets, addressing the urgent task of decarbonising hard-to-abate sectors, and reduce the UK's dependency on fossil fuels.

- [Equinor: 'Blue H<sub>2</sub> will be cheaper than green for the next two decades — from Norway, at least'](#)
  - “In our Norway hub, our 2GW of H<sub>2</sub> is blue. Our view is that blue hydrogen will be important in the next couple of decades and then green hydrogen will come after that,” Hove said. He suggested it will take a couple of decades for green hydrogen to be cost-competitive with blue hydrogen.
- [Perfluorinated ligand makes long-awaited debut in rhodium complex](#)
  - After a 40-year wait, fully fluorinated cyclopentadienyl derivative finally connects with a metal partner

## Clean Energy General News

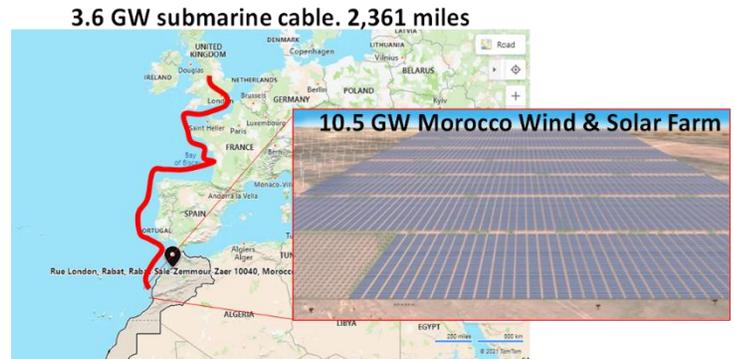
- [EU Electricity Prices](#)
  - EU Commission President von der Leyen said the bloc is working on an emergency intervention in the electricity market as energy prices skyrocket ahead of what would be a difficult winter for Europe. She emphasized the skyrocketing prices have been exposing the EU's electricity market design limitations, emphasizing that the market was develop under different circumstances and is no longer fit for purpose.
  - Matt, 18 EU countries > \$0.50/kWh. Germany was the highest 2020 price at \$0.33/kWh for reference, now \$0.641/kWh



- [Why Chile's Energy Future Is Everyone's Energy Future \(USGS Global Reserves: 41% Li, 23% Cu \)](#)
  - Chileans prepare to approve a new national constitution on September 4. The draft document is 178 pages long, and contains 11 chapters and 388 articles. It is a radical shift from Chile's existing constitution, one so extreme that it has been described by The Economist as “a “fiscally irresponsible left-wing wish list.” Of particular interest in the draft constitution where mining for copper and extraction of lithium are concerned is Article 145, which reads as follows:
    - 1. *The State has absolute, exclusive, inalienable and imprescriptible dominion over all mines and mineral substances, metallic, non-metallic, and deposits of fossil substances and hydrocarbons existing in the national territory, with the exception of surface clays, without prejudice to the ownership of the land on which they are located.*
    - 2. *The exploration, exploitation and use of these substances shall be subject to a regulation that considers their finite, non-renewable nature, intergenerational public interest and environmental protection.*
- [Metals for Clean Energy](#)
  - Pathways to solving Europe's raw materials challenge
  - This study evaluates how Europe can fulfil its goal of “achieving resource security” and “reducing strategic dependencies” for its energy transition metals, through a demand, supply, and sustainability assessment of the Green Deal and its resource needs.
  - It concludes that Europe has a window of opportunity to lay the foundation for a higher level of strategic autonomy and sustainability for its strategic metals through optimised recycling, domestic value chain investment, and more active global sourcing. But firm action is needed soon to avoid bottlenecks for several materials that risk being in global short supply at the end of this decade.
- [Yara cuts cast doubt on Europe's fertiliser production](#)

- Norway's Yara, one of the world's largest fertiliser makers, is slashing ammonia production due to soaring gas prices, raising questions about Europe's ability to produce enough fertiliser for its crops.
- Ammonia plays a key role in the manufacturing of fertiliser. Without it, crop yields will deteriorate because nutrients removed from soil during harvesting are not replenished.
- Yara has repeatedly warned the world faces an extreme food supply shock due to a combination of high gas prices, the war in major grains producer Ukraine and sanctions on fertiliser producer Russia.
- Fertilisers require large amounts of energy to be produced. Manufacturers such as Yara use gas for the process. Gas prices have surged almost 40% in August and nearly 300% this year.
- [Beer Shortages in Europe? Surging Energy Costs are Shutting Down Fertilizer Plants... And Consequently Brewers](#)
  - The EU may not need to embark on burdensome efforts to cut down the use of fertilizer in the name of reducing emissions, it appears the region's energy crisis will do all the work. The soaring cost of natural gas is forcing fertilizer plants across Europe to shutter output, sending ripple effects through numerous industries including farmers and food manufacturers. But, most notably and likely the most overlooked, though has been the subsequent impact CO<sub>2</sub> supplies, a byproduct of fertilizer production.
  - *Matt: Precious metals including copper, gold, and palladium can be dissolved in supercritical CO<sub>2</sub> by oxidation with HNO<sub>3</sub> (Nitric Acid) and subsequent chelation with hexafluoro acetylacetone to form CO<sub>2</sub>-soluble metal β-diketonate complexes. Are your CO<sub>2</sub> supplies underpinned?*
  - *Matt: Ammonia production is the single largest #natgas consumer in Germany. Ammonia prices followed gas prices during the winter, but dropped a third since April, while TTF doubled. In other words: European ammonia producers cannot pass through gas price anymore.*
- [Goldman Says Buy Commodities, 'Worry About Recession Later'](#)
  - Slowdown risks outside Europe seen 'relatively low,' bank says
  - Equities could suffer as raw materials gain, analysts forecast
- [Topsoe Increases Prices on Catalysts due to Escalating Raw Material and Energy Prices](#)
  - As a result of the increasing cost of natural gas, electricity, and several key commodity chemicals used in our catalyst production process, Topsoe will have to increase prices across our catalyst product line. Depending on the product portfolio the price increases will be in the 5-15% range.
  - The price adjustments will take effect immediately
- [Itochu: Decarbonization of the Steel Industry: Supply Chain of Ferrous Raw Material for Green Ironmaking with Low Carbon Emission](#)
  - The Ferrous Material to be produced by Emirates Steel shall be the raw material through a drastically decarbonized process. Electricity is expected to be switched from natural gas to renewable energy sources, including solar power generation. The CO<sub>2</sub>, generated from the direct reduction of iron ore using natural gas, will be processed by carbon capture, utilization and storage ("CCUS"), which is Enhanced Oil Recovery ("EOR") as CO<sub>2</sub> injection into the UAE oil field. Also, we are considering switching to net-zero CO<sub>2</sub> emissions by performing the hydrogen reduction method in the future.
- [A new factory, set to be built in Hunterston, Scotland, will manufacture the world's longest subsea cable that will carry clean energy from Morocco to the UK.](#)

- The **£17bn** subsea cable project will power ~7 million UK homes by 2030. Four 3,800km-long cables made of 90,000 tons of steel will transport 7GW of solar and 3.5GW of wind energy from the Sahara Desert, carry it past Portugal, Spain and France, and deliver it to the UK. *Matt: 4x cables are capable 3.6GW transmission.*
- *Matt: 360,000 mt of carbon steel (\$240M), to get a metal with 7% equivalent conductivity as pure copper.*



*Using Steel for power transportation sea cables is a first. If made of denser copper, I estimated 140,000 metric tons of copper (\$1.1B at current prices). More steel needed to mitigate transmission losses.*

## **BEV / LiB Mineral & Battery Market News**

- **[Honda to build new EV battery plant in U.S. with LG for \\$4.4bn](#)**
  - Japanese automaker seeks stable supply of batteries with South Korean partner
- **[Mercedes-Benz signs Memorandum of Understanding with Government of Canada to strengthen cooperation across the electric vehicle value chain, including natural resources development](#)**
  - Mercedes-Benz to explore linkages to Canada's strong mining and refinery sectors and to explore opportunities to utilise and grow Canada's ecosystems for electric vehicles and automotive parts
  - Canadian-German Rock Tech Lithium and Mercedes-Benz intend to sign an agreement for an annual supply of up to 10,000 tonnes of lithium hydroxide
- **[Volkswagen Group and Canada aim to advance sustainable battery supply chain in North America](#)**
  - VW and the Government of Canada aim to promote e-mobility in the country and to explore opportunities across Canada's automotive and battery supply chain. This was agreed in a MoU signed today in Toronto by
- **[LG Chem to build 4th carbon nanotube plant for battery materials](#)**
  - "The new plant is part of LG Chem's initiative to gain a more competitive edge in the rapidly growing global CNT market focused on electric vehicle (EV) battery materials," the company said, adding that the new plant will have an annual production capacity of 3,200 tons.
  - LG Chem will start construction of the fourth plant in the first half of 2023 and expects the plant will begin operation in the second half of 2024. With four plants, LG Chem will be able to produce 6,100 tons of CNT annually.
- **[Tesla Semi reservations closed, new details released ahead of launch](#)**
  - Up until recently, Tesla was taking \$20,000 reservations for the upcoming electric semi, but as of today, the "reserve now" button has been removed from its website & replaced with a "get updates" button.
  - Tesla still says the truck will be capable of 0-60 in 20 seconds and have 300 or 500-mile battery options with a consumption of under 2kWh per mile, all while fully loaded to its 82,000 lb. capacity.
- **[Battery Metals Mining Has a Resource Nationalism Problem - WSJ](#)**
  - Inflation, competition with China for resources will hand further leverage to metal-rich low-income countries. In a little over a week, Chileans may redraw the global road map for the mining of metals crucial to the world's clean energy transition.
  - Even if they don't, global demand for metals like nickel, cobalt and lithium is running into a new global wave of resource nationalism and environmental activism. For miners that means higher costs, and that the bumper profits of the last commodity Supercycle may be hard to replicate. High inflation and competition with China for resources will hand further leverage to metal-rich low-income countries.

- [Project to dig largest lithium mine in US faces legal roadblocks despite push to reduce reliance on China and other foreign countries](#)
  - Nevada site is a priority for US goal of reducing reliance on foreign sources, including China, of the mineral used in electric vehicle batteries and other devices
  - But resistance from Native American tribes and environmental watchdogs, as well as uncertainties of nascent technology, threaten delays
- [CATL Working on New Battery Material Technology \(called M3P\)](#)
  - China's CATL is working on new battery materials that can improve energy density by 10% to 20% compared to iron phosphate batteries, the company's chairman said, as the battery giant scrambles to retain its top position amid competition.
  - The new material technology known as M3P can enable an electric vehicle to run 700 km (430 miles) per charge combined with CATL's next generation of battery pack technology, Zeng Yuqun said at the World New Energy Vehicle Congress in Beijing on Saturday.
  - The new materials will also lower the costs compared to nickel and cobalt-based batteries, he added.
  - Zeng, however, didn't say what metals M3P batteries will use or when mass production could star.
- [Battery-makers slash cobalt intensity in the face of accelerating demand](#)
  - EV battery-makers are reducing the amount of cobalt in their products in an effort to cut costs and avoid the stigma of buying a product fraught with troubling labor practices. But cobalt demand will soar anyway, thanks to the sheer volume of rising electric vehicle sales.
- [Ukrainian lithium will get into the batteries of BMW electric vehicles](#)
  - At the beginning of 2022, the Austrian mining company European Lithium Limited and the Millstone & Co group of companies agreed to jointly develop Ukrainian lithium projects.
  - Last week, European Lithium Limited signed a memorandum of understanding with BMW to provide Europe's first production of lithium hydroxide (LiOH) for batteries.
- [Why Canada's 'orphan' mineral explorers are struggling despite surging commodity prices](#)
  - Yet in Canada and other Western countries, many prominent junior exploration companies searching for nickel, copper and other metals critical to the energy transition are struggling to raise funds, even though the metals they aim to produce are trading at elevated levels amid the EV frenzy.
  - "I'm not necessarily a rigid central planning advocate, but there is a reason why China is cleaning our clocks in the race to dominate the battery supply chain," said Martin Turenne, chief executive of Vancouver-based FPX Nickel Corp. "Any hope we have to compete is predicated on close co-operation of mining companies, chemical companies, battery companies, car companies, as well as the very explicit funding support of governments."

**Regards – Matt**

44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver
76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold

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